Sketching the Parabola $y = ax^2 + q$ (Grade 10)

WORKSHEET

Name: ..... Class: .....

Date: .....

MARK ____ / 22

Answer all questions. Show all your working — marks are awarded for method as well as the final answer.

1 Write down the shape and the turning point of $y = 3x^2 - 5$. (2)

2 Write down the y-intercept and the range of $y = x^2 + 2$. (2)

3 Determine the x-intercepts of $y = x^2 - 9$. (2)

4 Determine the x-intercepts of $y = 2x^2 - 8$. (3)

5 Does $y = x^2 + 5$ cut the x-axis? Give a reason. (2)

6 Write down the range of $y = -x^2 + 4$. **(2)**

7 $y = ax^2 + q$ has turning point $(0\ ;\ 1)$ and passes through $(2\ ;\ 9)$. Determine a and q. **(3)**

8 Describe how $y = x^2 - 3$ differs from $y = x^2$. **(2)**

9 Describe how $y = -x^2$ differs from $y = x^2$. **(2)**

10 Write down the domain and the range of $y = 2x^2 - 6$. **(2)**

TOTAL: 22 marks

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